Fourniers gangrene following hyfrecation in a male infected with the human immunodeficiency virus

M R Nelson, J Cartledge, S E Barton, B G Gazzard

Fourniers gangrene was first described in 1883 as an abrupt onset of painful scrotal swelling proceeding rapidly to gangrene.[1] The condition is frequently associated with either diabetes mellitus or alcohol abuse and it may occur with trauma, perianal sepsis or as a complication of urethral catheterisation, perhaps associated with urinary extravasation.[2–6]

The rapid destruction associated with Fourniers gangrene may be due to synergism between anaerobic streptococci, which are almost always isolated from the pus, and other micro organisms.

We report a case of Fourniers gangrene in a patient infected with the human immunodeficiency virus (HIV) following hyfrecation (unipolar electrodiathermy) for extensive genital warts.

Case report

A 29 year old HIV positive male with a CD4 count of 6/mm^3 and an AIDS diagnosis of Kaposi's sarcoma made 1 year prior to this admission, presented with a one week history of confusion and pyrexia. Ten days previously he had been started on flucloxacillin for a superficial cutaneous infection with *Staphylococcus aureus*, following hyfrecation of his recurrent genital warts 5 days before. On examination he had painful, ulcerating lesions of both groins with a 3 × 5 cm necrotic area of the left hemi-scrotum. He had similar lesions in the left axilla and a redness of the right eye with a purulent discharge.

The patient was taking zidovudine 250 mg bd, and co-trimoxazole 2 tablets bd. Full blood count showed a haemoglobin of 9·5 g/dl, a platelet count of 109 × 10^9/l and an absolute neutrophil count of 0·5 × 10^9/l.

A diagnosis of Fourniers gangrene was made and the patient was treated by surgical debridement and intravenous antibiotics (gentamicin, metronidazole and benzyl penicillin). Topical chloramphenicol was administered to his right eye. Faecal streptococci were grown from the groin and *Pseudomonas aeruginosa* was cultured from groin, eye and blood cultures. As a result of in-vitro sensitivity testing the antibiotic therapy was changed to ciprofloxacin and piperacillin after 48 hours.

The visual acuity in his right eye deteriorated, associated with clouding of the cornea and the development of a 6 mm necrotic ulcer. This was treated with topical gentamicin and ticarcillin.

As after 3 days treatment the patient's neutrophil count had not risen above 0·5 × 10^9/l he was given Granulocyte Colony Stimulating Factor (0·5 mu/kg/day). Five days later his neutrophil count had risen to 5·5 × 10^9/l and on the sixth day the GCSF was stopped, when his neutrophil count was 10·8 × 10^9/l. With this treatment the scrotal, axillary and groin lesions healed completely, and his corneal ulceration improved. He remains well 2 months later.

Discussion

This is the first description of Fourniers gangrene in an HIV antibody positive individual. Bacterial infections are common in HIV patients, and in addition this patient's neutropenia, probably secondary to his drug regime and his HIV disease, almost certainly contributed to the aetiology of his condition.

In this case pseudomonas and anaerobic streptococci were cultured from the tissue, and pseudomonas alone from blood cultures. Infections with pseudomonas have been reported to be commoner in those infected with HIV,[7] and there have been reports of pseudomonas associated skin conditions in such individuals.[8–10]

Successful treatment of Fourniers gangrene requires both surgical and medical intervention. In this case, initial treatment with flucloxacillin was inadequate. A full white count had also been performed so that corrective action could have been taken if necessary. *Broad spectrum* antibiotics are essential prior to the results of tissue and blood cultures being available, and should cover streptococcus, anaerobes and gram negative aerobes. It is essential that early debridement of gangrenous tissue be performed, with any extensive tissue defect being covered by split thickness skin graft once infection has resolved. Hyperbaric oxygen has been reported to reduce the spread of gangrene and decrease mortality, especially if used early in the disease.[11 12] Despite these therapies mortality remains high with rates of between 13% and 60% being reported,[4 13] mostly as a result of adult respiratory distress syndrome and renal failure.

Prevention of infections in immunosuppressed individuals is of great importance. In HIV patients who are severely immunosuppressed the use of prophylactic antibiotics after hyfrecation may reduce the incidence of cutaneous infections. If infections do occur and if the patient is neutropenic prompt use of GCSF, by altering both neutrophil number and function, may reduce associated morbidity and mortality.

The Westminster Hospital, London
M R Nelson
J Cartledge
S E Barton
B G Gazzard

Address for correspondence: Dr B G Gazzard, Westminster Hospital, Dean Ryle St, London, SW1P 2AP, UK.

Accepted for publication 22 June 1992

1 Fournier JA. Gangrène foudroyante de la verge. *Medecin Pratique* 1883;4:589–97.
2 Rudolph R, Soloway M, De Palma RG, Persky L. Fourniers syndrome: synergistic gangrene of the scrotum. *Am J Surg* 1975;**129**:591–5.
3 Campbell JC. Fourniers gangrene. *Br J Urol* 1955;**27**:106.
4 Jones RB, Hirschmann JV, Brown GS, Tremann JA. Fourniers Syndrome: necrotizing subcutaneous infection of the male genitalia. *J Urol* 1979;**122**:279–82.
5 McGeehan DF, Asmal AB, Angorn IB. Fourniers gangrene. *S Afr Med J* 1984;**66**:734–7.
6 Wolach MD, MacDermott JP, Stone AR, de Vere White RW. Treatment and complications of Fourniers Gangrene. *Br J Urol* 1989;**64**:310–4.
7 Nelson MR, Shanson D, Barter G, Hawkins D, Gazzard B. Pseudomonas septicaemia associated with the human immunodeficiency virus. *AIDS* 1991;5:761–4.
8 Nelson MR, Langtrey J, Barton SE, Gazzard BG. Ecthyma gangrenosum without bacteraemia in an HIV seropositive male. *Int J STD and AIDS* 1991;**2**:295–6.
9 Sangeorzan JA, Bradley SF, Kauffman CA. Cutaneous manifestations of pseudomonas infection in the acquired immunodeficiency syndrome. *Arch Dermatol* 1990;**126**: 832–3.
10 Schlossberg D. Multiple erythematous nodules as a manifestation of *Pseudomonas aeruginosa* septicaemia. *Arch Dermatol* 1988;**116**:446–7.
11 Eltori IM, Hart GB, Strauss MB, *et al.* The role of hyperbaric oxygen in the management of Fourniers gangrene. *Int Surg* 1986;**71**:53–8.
12 Ellis ME, Mandal BK. Hyperbaric oxygen treatment: 10 years experience of a regional infectious diseases unit. *J Infect* 1983;**6**:17–28.
13 Flanigan RC, Kursh ED, McDougal WS, *et al.* Synergistic gangrene of the scrotum and penis secondary to colorectal disease. *J Urol* 1978;**119**:369–71.